

REMARKS

In this Response, Applicants amend claims 1, 8, 14, 27 and 28. No new matter has been added. Claims 1-11, 14-18, 20, 27 and 28 are currently pending, of which claims 1, 8, 14, 27 and 28 are independent.

I. Rejection of Claims 1-5, 7-11, 14-18, 20, 27 and 28 under 35 U.S.C. § 102(e)

Claims 1-5, 7-11, 14-18, 20, 27 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,716,213 to Shitoto (hereafter “Shitoto”). Applicants respectfully traverse the 35 U.S.C. 102(e) rejection of claims 1-5, 7-11, 14-18, 20, 27 and 28 as set forth below.

A. Summary of the 35 U.S.C. 102(e) Rejection

The Examiner appears to cite through holes 11 and 21 in Shitoto as disclosing the first and second bore holes recited in the claims (Office Action, page 2). Based on the Examiner’s citation of Shitoto, the two through holes 11 in Figure 7 of Shitoto would be expected to correspond to the first and second bore holes of claim 8.

The Examiner also appears to cite the two-component structure at the top of Figure 9 as disclosing the features of the claims (Office Action, page 5).

B. Claim 1

Applicants respectfully submit that Shitoto fails to disclose at least the following feature of independent claim 1: “the first bore hole extending along a first longitudinal axis... the second bore hole extending along a second longitudinal axis that is parallel to the first longitudinal axis, wherein the first longitudinal axis is configured to be offset in a sagittal plane from the second longitudinal axis by a predetermined offset distance when the connector connecting the first and second spinal rods is implanted in a patient.”

(i) Shitoto, Figure 7

Figure 7 and related text of Shitoto do not disclose “the first bore hole extending along a first longitudinal axis... the second bore hole extending along a second longitudinal axis that is parallel to the first longitudinal axis, wherein the first longitudinal axis is configured to be offset

in a sagittal plane from the second longitudinal axis by a predetermined offset distance when the connector connecting the first and second spinal rods is implanted in a patient,” as recited in claim 1.

Shitoto relates to a spinal-rod connecting apparatus. Shitoto discusses a connector 10 which has a through-hole 11 through which a rod 15 can be inserted (Shitoto, Figures 1-3 and related text). Shitoto also discusses a connector 20 which has a through hole 21. The connectors 10 and 20 may be used together (Shitoto, Figures 4-6 and related text). In operation, for example, a first connector 10-1 is set on the rod 15 by inserting the rod 15 into the through-hole 11, and the short rod 12 of the first connector 10-1 is inserted into the through-hole 11 in a second connector 10-2 (Shitoto, Figure 7 and related text).

In Figure 7, the through hole 11 of the first connector 10-1 extends along a first longitudinal axis which extends along the vertical direction. This is shown by the fact that the rod 15 fits through the through hole 11 of the first connector and extends along the vertical direction. The through hole 11 of the second connector 10-2 extends along a second longitudinal axis which extends along the horizontal direction. This is shown by the fact that the short rod 12 fits through the through hole 11 of the second connector and extends along the horizontal direction.

Thus, the first and second longitudinal axes in Figure 7 of Shitoto are perpendicular to each other, because the first longitudinal axis extends along the vertical direction and the second longitudinal axis extends along the horizontal direction. As such, Figure 7 and related text of Shitoto do not disclose that **the first and second longitudinal axes are parallel to each other**, wherein the first longitudinal axis is configured to be offset in a sagittal plane from the second longitudinal axis by a predetermined offset distance, as required by claim 1.

(ii) Shitoto, Figure 9

Figure 9 and related text of Shitoto also do not disclose “the first bore hole extending along a first longitudinal axis... the second bore hole extending along a second longitudinal axis that is parallel to the first longitudinal axis, wherein the first longitudinal axis is configured to be offset in a sagittal plane from the second longitudinal axis by a predetermined offset distance when the connector connecting the first and second spinal rods is implanted in a patient,” as recited in claim 1.

In Figure 9, Shitoto illustrates two rods 15 running along a patient's spine 32 (Shitoto, Figure 9 and related text). At the top of Figure 9, cited by the Examiner, Shitoto merely illustrates two components, each attached to a rod 15 (Shitoto, Figure 9). However, Shitoto does not identify these components with a reference numeral or a description. In fact, there is no disclosure or teaching in Shitoto with regard to these components.

Nonetheless, the two components depicted in Figure 9 of Shitoto are not offset in the sagittal plane of the patient, as required by claim 1. In fact, Figure 9 clearly depicts that there is zero offset between the two components in the sagittal plane.

As such, Shitoto does not disclose each and every feature of claim 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of the above 35 U.S.C. 102(e) rejection of claim 1.

C. Claims 2-5 and 7

Claims 2-5 and 7 depend from independent claim 1 and, include additional patentable features. As such, for at least the reasons set forth above, Shitoto does not disclose each and every feature of claims 2-5 and 7. Accordingly, Applicants respectfully request reconsideration and withdrawal of the above 35 U.S.C. 102(e) rejection of claims 2-5 and 7.

D. Claim 8

Applicants respectfully submit that Shitoto fails to disclose at least the following feature of independent claim 8: "a first bore hole extending along a first longitudinal axis for receiving a portion of the first rod and a second bore hole extending along a second longitudinal axis that is non-parallel and non-perpendicular with the first longitudinal axis for receiving a portion of the second rod."

(i) Shitoto, Figure 7

Figure 7 and related text of Shitoto do not disclose "a first bore hole extending along a first longitudinal axis for receiving a portion of the first rod and a second bore hole extending along a second longitudinal axis that is non-parallel and non-perpendicular with the first longitudinal axis for receiving a portion of the second rod," as recited in claim 8.

In Figure 7, the through hole 11 of the first connector 10-1 extends along a first longitudinal axis which extends along the vertical direction (the rod 15 fits through the through hole 11 and extends along the vertical direction). The through hole 11 of the second connector

10-2 extends along a second longitudinal axis which extends along the horizontal direction (the short rod 12 fits through the through hole 11 and extends along the horizontal direction).

Thus, the first and second longitudinal axes in Figure 7 are perpendicular to each other, because the first longitudinal axis extends along the vertical direction and the second longitudinal axis extends along the horizontal direction. As such, Figure 7 and related text of Shitoto do not disclose that the first and second longitudinal axes are non-parallel and non-perpendicular to each other, as required by claim 8.

(ii) Shitoto, Figure 9

Figure 9 and related text of Shitoto also do not disclose “a first bore hole extending along a first longitudinal axis for receiving a portion of the first rod and a second bore hole extending along a second longitudinal axis that is non-parallel and non-perpendicular with the first longitudinal axis for receiving a portion of the second rod,” as recited in claim 8.

The bore holes of the identified components in Figure 9 of Shitoto appear to extend through parallel longitudinal axes. As such, Figure 9 and related text of Shitoto do not disclose that the bore holes of the components are non-parallel and non-perpendicular to each other, as required by claim 8.

As such, Shitoto does not disclose each and every feature of claim 8. Accordingly, Applicants respectfully request reconsideration and withdrawal of the above 35 U.S.C. 102(e) rejection of claim 8.

E. Claims 9-11

Claims 9-11 depend from independent claim 8 and, include additional patentable features. As such, for at least the reasons set forth above, Shitoto does not disclose each and every feature of claims 9-11. Accordingly, Applicants respectfully request reconsideration and withdrawal of the above 35 U.S.C. 102(e) rejection of claims 9-11.

F. Claim 14

Applicants respectfully submit that Shitoto fails to disclose at least the following features of independent claim 14: “the first bore hole extending along a first longitudinal axis... a second bore hole extending along a second longitudinal axis that is parallel with the first longitudinal

axis, the second bore hole being movable relative to the first bore hole for receiving a portion of the second rod.”

(i) Shitoto, Figure 7

Figure 7 and related text of Shitoto do not disclose “the first bore hole extending along a first longitudinal axis... a second bore hole extending along a second longitudinal axis that is parallel with the first longitudinal axis, the second bore hole being movable relative to the first bore hole for receiving a portion of the second rod,” as recited in claim 14.

In Figure 7, the through hole 11 of the first connector 10-1 extends along a first longitudinal axis which extends along the vertical direction (the rod 15 fits through the through hole 11 and extends along the vertical direction). The through hole 11 of the second connector 10-2 extends along a second longitudinal axis which extends along the horizontal direction (the short rod 12 fits through the through hole 11 and extends along the horizontal direction).

Thus, the first and second longitudinal axes in Figure 7 are perpendicular to each other, because the first longitudinal axis extends along the vertical direction and the second longitudinal axis extends along the horizontal direction. As such, Figure 7 and related text of Shitoto do not disclose a first bore hole extending along a first longitudinal axis and a second bore hole extending along a second longitudinal axis that is parallel with the first longitudinal axis, as required by claim 14.

(ii) Shitoto, Figure 9

Figure 9 and related text of Shitoto also do not disclose “the first bore hole extending along a first longitudinal axis... a second bore hole extending along a second longitudinal axis that is parallel with the first longitudinal axis, the second bore hole being movable relative to the first bore hole for receiving a portion of the second rod,” as recited in claim 14.

More specifically, Shitoto does not disclose that the components in Figure 9 have bore holes that are movable relative to each other, as required by claim 14. Figure 9 and related text of Shitoto do not disclose a first bore hole extending along a first longitudinal axis... a second bore hole extending along a second longitudinal axis that is parallel with the first longitudinal axis, the second bore hole being movable relative to the first bore hole for receiving a portion of the second rod, as required by claim 14.

As such, Shitoto does not disclose each and every feature of claim 14. Accordingly, Applicants respectfully request reconsideration and withdrawal of the above 35 U.S.C. 102(e) rejection of claim 14.

G. Claims 15-18 and 20

Claims 15-18 and 20 depend from independent claim 14 and, include additional patentable features. As such, for at least the reasons set forth above, Shitoto does not disclose each and every feature of claims 15-18 and 20. Accordingly, Applicants respectfully request reconsideration and withdrawal of the above 35 U.S.C. 102(e) rejection of claims 15-18 and 20.

H. Claim 27

Applicants respectfully submit that Shitoto fails to disclose at least the following feature of independent claim 27: “the first bore hole extending along a first longitudinal axis... the second bore hole extending along a second longitudinal axis that is parallel with the first longitudinal axis... the first longitudinal axis is configured to be offset from the second longitudinal axis in a first plane by a first predetermined offset distance and by a second predetermined offset distance in a second plane that is perpendicular to the first plane.”

(i) Shitoto, Figure 7

Figure 7 and related text of Shitoto do not disclose “the first bore hole extending along a first longitudinal axis... the second bore hole extending along a second longitudinal axis that is parallel with the first longitudinal axis... the first longitudinal axis is configured to be offset from the second longitudinal axis in a first plane by a first predetermined offset distance and by a second predetermined offset distance in a second plane that is perpendicular to the first plane,” as recited in claim 27.

In Figure 7, the through hole 11 of the first connector 10-1 extends along a first longitudinal axis which extends along the vertical direction (the rod 15 fits through the through hole 11 and extends along the vertical direction). The through hole 11 of the second connector 10-2 extends along a second longitudinal axis which extends along the horizontal direction (the short rod 12 fits through the through hole 11 and extends along the horizontal direction).

Thus, the first and second longitudinal axes in Figure 7 are perpendicular to each other, because the first longitudinal axis extends along the vertical direction and the second

longitudinal axis extends along the horizontal direction. As such, Figure 7 and related text of Shitoto do not disclose a first bore hole extending along a first longitudinal axis and a second bore hole extending along a second longitudinal axis that is parallel with the first longitudinal axis, as required by claim 27.

Furthermore, Figure 7 and related text of Shitoto also do not disclose that the first longitudinal axis is configured to be offset from the second longitudinal axis in a first plane by a first predetermined offset distance and by a second predetermined offset distance in a second plane that is perpendicular to the first plane, as required by claim 27. In Figure 7, the through holes 11 of the first connector 10-1 and second connector 10-2 are offset from each other in a first plane that runs along the horizontal direction on Figure 7. However, the holes 11 of the first connector 10-1 and second connector 10-2 are not offset from each other **in a second plane that is perpendicular to the first plane**, as required by claim 27.

(ii) Shitoto, Figure 9

Figure 9 and related text of Shitoto also do not disclose “the first bore hole extending along a first longitudinal axis... the second bore hole extending along a second longitudinal axis that is parallel with the first longitudinal axis... the first longitudinal axis is configured to be offset from the second longitudinal axis in a first plane by a first predetermined offset distance and by a second predetermined offset distance in a second plane that is perpendicular to the first plane,” as recited in claim 27.

The components in Figure 9, cited by the Examiner, appear to define two longitudinal axes running along the spine 32. The longitudinal axes are offset from each other only in a horizontal direction on Figure 9. However, the longitudinal axes are not offset from each other in a first plane by a first offset distance and by a second offset distance in a second plane that is perpendicular to the first plane, as required by claim 27.

As such, Shitoto does not disclose each and every feature of claim 27. Accordingly, Applicants respectfully request reconsideration and withdrawal of the above 35 U.S.C. 102(e) rejection of claim 27.

I. Claim 28

Applicants respectfully submit that Shitoto fails to disclose at least the following feature of independent claim 28: “the first bore hole extending from the front surface to the back

surface... the second bore hole extending from the front surface to the back surface... wherein the first bore hole is offset from the second bore hole, such that said first bore hole is closer to the bottom surface of the housing than the second bore hole.”

(i) Shitoto, Figure 7

Figure 7 and related text of Shitoto do not disclose “the first bore hole extending from the front surface to the back surface... the second bore hole extending from the front surface to the back surface... wherein the first bore hole is offset from the second bore hole, such that said first bore hole is closer to the bottom surface of the housing than the second bore hole,” as recited in claim 28.

The through hole 11 of the first connector 10-1 extends from a top surface to a bottom surface of the first connector. The through hole 11 of the second connector 10-2 extends from a left surface to a right surface of the second connector. Even if the two connectors 10-1 and 10-2 are considered a single housing component, the two through holes 11 do not extend from a same first surface (front surface in claim 28) to a same second surface (back surface in claim 28). As such, Figure 7 and related text of Shitoto do not disclose both a first bore hole and a second bore hole extending from the same front surface to the same back surface of a housing component, as required by claim 28.

In addition, Figure 7 and related text of Shitoto do not disclose that the through holes 11 are offset from each other such that one through hole is closer to the bottom surface of the housing than the other through hole. Figure 7 of Shitoto does not show the configuration of the through holes 11 in relation to a bottom surface of the connectors 10-1 and 10-2. As such, Figure 7 and related text of Shitoto do not disclose that a first bore hole is offset from a second bore hole, such that the first bore hole is closer to a bottom surface of the housing than the second bore hole, as required by claim 28.

(ii) Shitoto, Figure 9

Figure 9 and related text of Shitoto also does not disclose “the first bore hole extending from the front surface to the back surface... the second bore hole extending from the front surface to the back surface... wherein the first bore hole is offset from the second bore hole, such that said first bore hole is closer to the bottom surface of the housing than the second bore hole,” as recited in claim 28.

The components in Figure 9, cited by the Examiner, do not have bore holes offset from each other, such that one bore hole is closer to a bottom surface of the components than the other bore hole. In fact, Figure 9 appears to show that the bore holes are an equal distance away from the bottom surface of the components. As such, Figure 9 and related text of Shitoto do not disclose that a first bore hole is offset from a second bore hole, such that the first bore hole is closer to a bottom surface of the housing than the second bore hole, as required by claim 28.

As such, Shitoto does not disclose each and every feature of claim 28. Accordingly, Applicants respectfully request reconsideration and withdrawal of the above 35 U.S.C. 102(e) rejection of claim 28.

II. Rejection of Claim 6 under 35 U.S.C. § 103(a)

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shitoto in view of U.S. Patent No. 5,053,034 to Olerud et al. (hereafter “Olerud”). Applicants respectfully traverse the 35 U.S.C. 103(a) rejection of claim 6 as set forth below.

Claim 6 depends from independent claim 1 and, as such, includes all of the features of claim 1. Applicants respectfully submit that Shitoto and Olerud, alone or in any combination, fail to teach or suggest “the first bore hole extending along a first longitudinal axis... the second bore hole extending along a second longitudinal axis that is parallel to the first longitudinal axis, wherein the first longitudinal axis is configured to be offset in a sagittal plane from the second longitudinal axis by a predetermined offset distance when the connector connecting the first and second spinal rods is implanted in a patient,” as recited in claim 1 from which claim 6 depends.

Shitoto does not teach or suggest at least “the first bore hole extending along a first longitudinal axis... the second bore hole extending along a second longitudinal axis that is parallel to the first longitudinal axis, wherein the first longitudinal axis is configured to be offset in a sagittal plane from the second longitudinal axis by a predetermined offset distance when the connector connecting the first and second spinal rods is implanted in a patient,” as recited in claim 1 from which claim 6 depends.

Olerud fails to cure this deficiency. Olerud discusses a spinal joint for use in spinal surgery includes two blocks pivotally connected to each other (Olerud, abstract). One block is secured to a vertebra with a bone screw, which the other block connects to another spinal joint (Olerud, abstract). The blocks rotate relative to one another, and can be locked relative to one another in various angular positions (Olerud, abstract). Serrations on one block engage with

corresponding serrations in the pivotal connection portion of the second block at a selected angle, and are locked in place by a locking screw (Olerud, abstract).

However, Olerud does not teach or suggest at least “the first bore hole extending along a first longitudinal axis... the second bore hole extending along a second longitudinal axis that is parallel to the first longitudinal axis, wherein the first longitudinal axis is configured to be offset in a sagittal plane from the second longitudinal axis by a predetermined offset distance when the connector connecting the first and second spinal rods is implanted in a patient,” as recited in claim 1 from which claim 6 depends.

As such, a combination of Shitoto and Olerud does not disclose each and every feature of claim 6. Accordingly, Applicants respectfully request reconsideration and withdrawal of the above 35 U.S.C. 103(a) rejection of claim 6.

CONCLUSION

In light of the above amendments and arguments, Applicants respectfully submit that all of the pending claims are in condition for allowance. Should the Examiner feel that a teleconference would expedite the prosecution of this application, the Examiner is urged to contact the Applicants' attorney at (617) 227-7400.

Please charge any shortage or credit any overpayment of fees to our Deposit Account No. 12-0080, under Order No. DUQ-002RCE2. In the event that a petition for an extension of time is required to be submitted herewith, and the requisite petition does not accompany this response, the undersigned hereby petitions under 37 C.F.R. § 1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized to be charged to the aforementioned Deposit Account.

Dated: February 9, 2009

Respectfully submitted,

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